AUBURN RD
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U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I
OFFICE OF SITE REMEDIATION AND RESTORATION

AUBURN ROAD LANDFILL SUPERFUND SITE
FIVE YEAR REVIEW
September 1997

I. INTRODUCTION

A. Authority, Purpose.

EPA Region I conducted this review pursuant to CERCLA Section 121(c), the National Contingency Plan Section 300.400(f)(4)(ii), and OSWER Directives 9355.7-02 (May 23, 1991) and 9355.7-02A (July 26, 1994). This Review is a Statutory Review. The purpose of a five-year review is to ensure that a remedial action remains protective of public health and the environment and is functioning as designed. This document will become a part of the Site File. Because construction of the final remedy at the Site has not been completed, this is a Type Ia review. Congress proposed listing of the Site on the National Priorities List on December 1, 1982 and finalized the listing on September 1, 1983.

EPA conducted the last five year review on September 30, 1992. The conclusion of that review was that the water line constructed in response to the 1986 Record of Decision and the 1987 Administrative Order continued to be protective of human health and the environment. No specific deficiencies were identified during the 1992 Five-Year Review. The only recommendation of the 1992 Five-Year Review is that five-year reviews of Site conditions continue.

B. Site Characteristics.

The Auburn Road Landfill Site (the "Site") is located in Rockingham County, Londonderry, New Hampshire. Although the Site covers approximately 200 acres, the three disposal areas cover approximately 12 acres. These disposal areas received a mix of domestic wastes and various hazardous wastes beginning in 1965 until the Site closed in 1980.

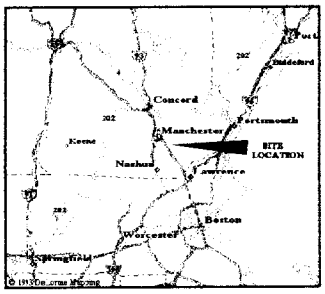
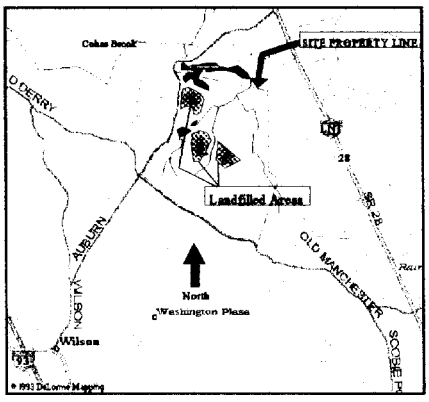


Figure 1. Location of the Site and various Site features.



The northern-most of the three disposal areas is the "Old Town Dump" (1.). The Old Town Dump is also the oldest of the disposal areas. The Tire Pile (2) and the Solid Waste Landfill (3) occupy the southern portion of the Site. Each of the three disposal areas covers approximately three to four acres; the thickness of the wastes ranges from eight to twenty feet.

Surface waters consist of small brooks, drainage trenches, and wetland areas that flow northward to Whispering Pines Pond and eventually Cohas Brook. Whispering Pines Pond lies, in part, on the northern boundary of the Site and accepts all surface water runoff from the Site. A seven acre wetland was created in the area between the Solid Waste landfill and the Tire Dump by the Town in order to replace affected wetlands in the area of the landfills. Whispering Pines Pond outfalls to a small stream that discharges to Cohas Brook. Ground water at the Site also flows northward; however, most of the ground water flow goes beneath Whispering Pines Pond and instead discharges to Cohas Brook.

The Site is approximately bounded by Auburn Road to the west, Old Derry Road to the south, State Highway 28 Bypass to the east, and the Londonderry-Auburn town line to the north. The Site is located in a rural-residential area with approximately 300 homes and a mobile home park with approximately 260 units within 1 mile of the Site.

C. Present Status of the Site

In response to a 1986 EPA Record of Decision (ROD) and 1987 Administrative Order, the Town of Londonderry installed a water main on Auburn Road to provide municipal drinking water to potentially exposed residents and the mobile home park. No one is presently drinking ground water contaminated by the Site. Following additional investigation, the EPA issued a ROD in 1989 that directed the disposal areas be capped and the ground water be extracted and treated. The EPA issued an Order to Potentially Responsible Party (PRP) groups in 1990 to perform the remedy outlined in the 1989 ROD. Under that Order the Town of Londonderry capped the three disposal areas with RCRA-type C caps in 1994.

Under that same 1990 Order, another group of PRPs began Pre-Design Investigations (PDI) in 1992 to design a ground water remedy. However, the results of the PDI indicated that nearly all of the volatile organic compounds (VOCs) were at the cleanup levels throughout much of the aquifer and would soon meet those standards in the remaining contaminated areas. Only arsenic remained consistently above cleanup levels. The results of the PDI and subsequent annual monitoring data led EPA to reconsider its ground water remedy. On December 19, 1996 EPA issued an amended Record of Decision that selected natural attenuation to achieve the ground water cleanup levels set in the 1989 ROD. The monitoring requirements of the 1996 Amended ROD have yet to be implemented.

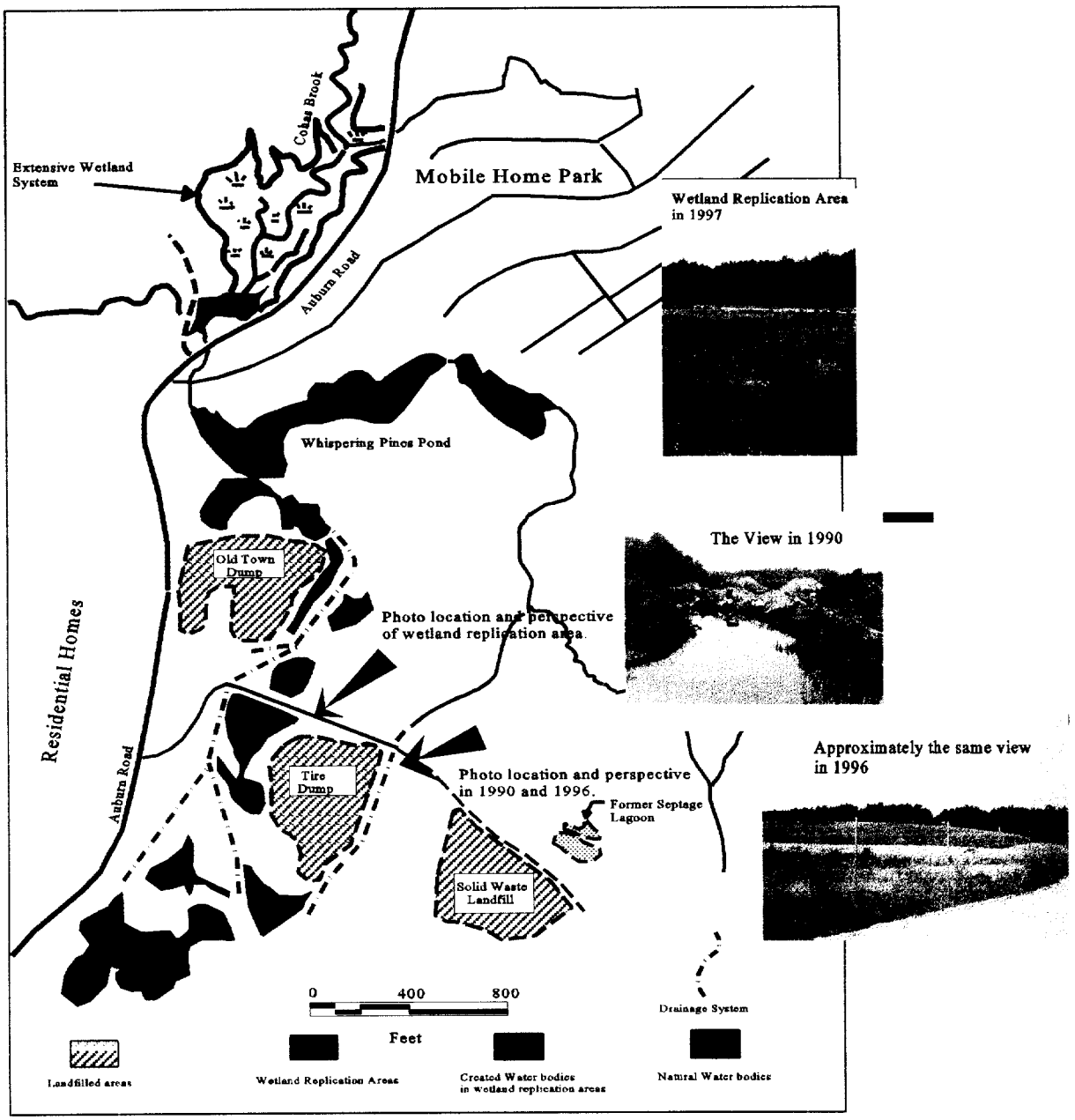


FIGURE 2 SITE DETAIL.. This map shows the pertinent portions of the Site and the remedy. Already constructed are the caps, shown in the checkerboard pattern, the drainage swales to keep the landfill dewaterered, shown in a blue dashed line, and the wetland replication area. The septage lagoon was excavated and placed in the Solid Waste Landfill.

II. REMEDIAL OBJECTIVES

A. Remedial Objectives of the 1986 Record of Decision

In the 1986 Remedial Investigation Report EPA found that significant ground water contamination existed off the property of the Landfill, leaking barrels existed in the landfills, and at least one public supply well was contaminated. The public supply well at Whispering Pines Pond served the 200+ residents of a mobile home park. In a separate action EPA removed more than 1900 barrels in May and June of 1986. On September 17, 1986, the Regional Administrator, Michael Deland, signed a ROD to extend an existing municipal drinking service 9,000 feet down Auburn Road.

Although no Remedial Response Objectives are laid out, it is apparent from the Declaration and the text to the ROD that the installation of a water line was seen as an interim action that did not address the source of contamination. No other actions were proposed in the 1986 ROD, other than to continue studies to further define the Site conditions. The implicit Remedial Response Objective was to eliminate public health risks from contaminated ground water used as drinking water.

The Town of Londonderry paid the City of Manchester to extend the waterline service to the residents of the mobile home park and the residents along Auburn Road. The Town completed construction of the 16-inch diameter waterline in 1987 and that service continues to the present.

B. Remedial Objectives Set of the 1989 Record of Decision

Additional Remedial Investigations conducted by EPA in 1987 further defined contamination at the Site after the drum removal. The 1987 Remedial Investigation resulted in EPA issuing a ROD on September 29, 1989 directing that the landfilled areas be capped and the ground water removed from the aquifer and treated. The 1989 ROD was intended to afford a final remedy.

The Remedial Response Objectives identified in the 1989 ROD were:

Ground water

- To reduce the potential present and future public health risks from ingestion of contaminated ground water.
- To reduce the potential present and future environmental risks to aquatic and terrestrial wildlife from exposure to the ground water which has migrated to the surface waters.

Soils

➢ To reduce potential present and future public health risks from ingestion of contaminated soil.

The Remedial Response Objectives for ground water were not addressed until the 1996 Amended ROD; however, the Town of Londonderry acted to meet the objective set for soil. To reduce the potential for present and future public health risks from contaminated soil, the Town consolidated the contaminated areas and placed a modified RCRA type C cap over the disposal areas. The Town had completed all construction activities, regrading, drainage, wetland replication, and cap construction when EPA signed the Remedial Action Completion Report on July 24, 1996. Only operation and maintenance of the cap remains to be done to ensure the Remedial Response Objective for soils in the 1989 ROD is met. Operation and Maintenance of the cap is presently being performed by the Town according to the *Post-Closure Operations and Maintenance Plan* and documented in annual Source Control Operation and Maintenance Reports.

C. Remedial Objectives Set of the 1996 Amended Record of Decision

The 1989 ROD directed that a ground water pump and treat remedy be built to meet the Remedial Response Objectives set out for ground water in Section II.B. above. A number of Potentially Responsible Parties were Ordered to perform this task and began the necessary Pre-Design Investigations (PDI) in 1991. Samples taken during the Ground Water Remedy PDI indicated that Site ground water contamination conditions had changed dramatically from 1986. The 1986 data were the basis of the ground water cleanup dictated in the 1989 ROD. The pre-design samples demonstrated that the volatile organic compounds (VOCs) that had contaminated much of the aquifer were now below the cleanup levels set by the 1989 ROD. Only arsenic remained in concentrations sufficient to pose a risk. The change in ground water conditions prompted the EPA to re-examine the ground water cleanup strategy.

Geochemical modeling demonstrated that capping the landfill should result in arsenic attaining cleanup levels off site within five years. Based on preliminary information relating to types of contaminants, environmental media of concern, and potential exposure pathways, EPA developed modified remedial action objectives for the 1996 Amended ROD. No exposure pathway exists for drinking water consumption nor soil ingestion, due to the supplied public water system and limited contamination in ground water, and the landfill cap covering contaminated soil, respectively. Therefore EPA chose the following three response objectives in the 1996 Record of Decision:

➢ Ensure that ground water discharge from the Site does not degrade the environment nor create a health risk for those people who wade or swim in surface waters near the Site.

- ➢ Ensure that ground water is not used as a source of drinking water and that progress is made towards achieving cleanup levels.

- ➢ Maintain the effectiveness of the landfill cap and the drainage structures to eliminate or reduce ground water infiltration through the landfilled areas.

The response action that the EPA selected to clean up the contaminated ground water was limited action which includes:

1. restoration of ground water through natural attenuation;

2. the development and implementation of a revised ground water, surface water, sediment and air sampling program that provides for investigation and remedial action contingent upon sampling data that show any of the following:

    a. an increase in ground water contamination.
    b. toxicity to aquatic life or a public health risk from arsenic contamination in sediments.
    c. a human health or ecological risk from contaminants in surface water.

3. the establishment of institutional controls through a Groundwater Management Zone, within which ground water will be restored; and

4. the continued maintenance of the landfill caps and drainage system to restrict ground water movement through the disposal areas to the greatest degree possible.

The EPA is currently negotiating with a group of PRPs to complete this portion of the remedy. Therefore, the components of this remedy have yet to be implemented.

D. Overall Attainment of all Remedial Objectives

Providing drinking water and capping the landfill fulfilled the response objectives set forth in the 1986 ROD and for soils in the 1989 ROD. The 1996 Amended ROD retained the response objectives for ground water in the 1989 ROD and added additional response objectives for surface water and sediments. Table 1 below shows the overall concentrations of contaminants in ground water at the Site, which is one of the considerations that EPA took into account in issuing the 1996 ROD. Geochemical modeling indicates that cleanup levels established for arsenic in ground water will be attained off-site in approximately 5 years after the caps have been installed. In the 1996 Amended ROD EPA allowed for a contingent sediment or surface water remedy if Remedial Response Objectives were violated for those media in any surface water body on or around the Site.

TABLE 1
CLEANUP LEVELS IN GROUND WATER AND STATUS
Set in 1989 ROD and 1996 Amended ROD

CONTAMINANT	BASIS	CLEANUP LEVEL (parts per billion)	1995 CONCENTRATIONS (in parts per billion)		NUMBER OF WELLS EXCEEDING CLEANUP LEVEL
			AVERAGE	MAXIMUM	
Vinyl Chloride	MCL	2	0.5	6	1 out of 15
trans 1,2 Dichloroethylene	MCL	70	0.4	6	0 out of 14
2-Butanone	Health Advisory	172	0.9	6	0 out of 15
Trichloroethylene	MCL	5	only one well detect	44	1 out of 15
Tetrachloroethylene	PMCL	5	only one well detect	100	1 out of 15
Toluene	MCL	1,000	1.1	6	0 out of 15
Benzene	MCL	5	0.9	6	1 out of 15
Arsenic	MCL	50	74.2	354	19 out of 37
Lead	MCL ACTION LEVEL	50 15	Lead has not exceeded cleanup levels or Action Levels.		

III. ARARs REVIEW

Since the 1996 ROD was signed there have been no changes in the regulatory standards for any of the compounds with identified cleanup levels. Nor have any State or Federal laws been enacted which may call into question the protectiveness of the remedy.

IV. SUMMARY OF SITE VISIT

The EPA Site manager, Darryl Luce, conducted a Site inspection on April 3, 1997. Present was Thomas Andrews, the State's Project Manager. The inspection revealed that the landfill caps and drainage structures remain in place and functional. Fences remain in place and appear to be effective in denying access to the actual capped areas.

V. AREAS OF NONCOMPLIANCE

No areas of noncompliance were noted.

VI. RECOMMENDATIONS

A ground water, surface water, and sediment monitoring program should be implemented. Sediment toxicity should be further monitored in Cohas Brook and Whispering Pines Pond using organisms in both acute and chronic testing.

VII. STATEMENT OF PROTECTIVENESS

I certify that the remedy selected for this Site remains protective of human health and the environment.

VIII. NEXT REVIEW

The next five-year review will be conducted by September 30, 2002 unless the natural attenuation ground water remedy has reached a successful conclusion and the Site is protective of human health and the environment and likely to remain so under an unlimited use and unrestricted exposure scenario.

Harley F. Laing, Director
Office of Site Remediation and Restoration, Region I